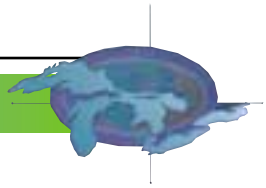

Executive Summary

This State of the Great Lakes (2001) report is the fourth biennial report issued by the governments of Canada and the United States of America (the Parties to the Great Lakes Water Quality Agreement), pursuant to reporting requirements of the Agreement. Previous reports presented information on the state of the Lakes based on ad hoc indicators suggested by scientific experts involved in the State of the Lakes Ecosystem Conferences (SOLEC). In 1996, those involved in SOLEC saw the need to develop a comprehensive, basin-wide set of indicators that would allow the Parties to report on progress under the Agreement in a comparable and standard format.

Indicators will tell us whether we are meeting the goals of the Great Lakes Water Quality Agreement *("...to restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes Basin Ecosystem")*, and provide us with answers to 'simpler' questions such as: Can we drink the water?; Can we eat the fish?; and Can we swim in the water? Indicators help us to measure our progress towards reaching our goals, or, alternatively, how far we have left to go.

This report represents the first in the indicator-based format, giving information on 33 of the 80 indicators being proposed by the Parties. These 33 indicators were selected because data for them were readily available with the individual indicator reports prepared by subject experts.

Not all of the proposed 80 indicators are presently being monitored. This situation represents a challenge to the Parties to ensure that information is available in a timely fashion to allow reporting on progress on all indicators, at a frequency suitable for each indicator. It is essential that monitoring systems be put in place to ensure collection of all essential information applicable to each indicator.

A full description of the indicators is in the ***Selection of Indicators for Great Lakes Basin Ecosystem Health, Version 4***.

The Parties cannot provide a detailed quantitative assessment of all aspects of the State of the Lakes based on 33 of 80 indicators. Nevertheless, the Parties make the following overall qualitative assessment:

The status of the chemical, physical, and biological integrity of the waters of the Great Lakes basin ecosystem has been assessed and is considered mixed because:

- **Surface waters are still amongst the best sources of drinking water in the world;**
- **Progress has been made both in cleaning up contaminants and in rehabilitating some fish and wildlife species;**
- **Invasive species continue as a significant threat to Great Lakes biological communities;**
- **Atmospheric deposition of contaminants from distant sources outside the basin confound efforts to eliminate these substances;**
- **Urban sprawl threatens high quality natural areas, rare species, farmland and open space; and**
- **Development, drainage, and pollution are shrinking coastal wetlands.**

The assessments for each of the 33 indicators are on the following page. The section that follows the Executive Summary contains implications for managers. This section was prepared in order to meet one of the SOLEC objectives: "...to strengthen the decision-making and environmental management concerning the Great Lakes."

Indicator Name	Indicator ID #	SOLEC Category	Assessment *
Walleye	9	Nearshore & Open Waters	Good
Contaminants in Colonial Nesting Waterbirds	115	Nearshore & Open Waters	Good
Drinking Water Quality	4175	Human Health	Good
Hexagenia	9	Nearshore & Open Waters	Mixed, improving
Atmospheric Deposition of Toxic Chemicals	117	Nearshore & Open Waters	Mixed, improving
Contaminants Affecting Productivity of Bald Eagles	8135	Nearshore Terrestrial	Mixed, improving
Brownfields Redevelopment	7006	Land Use	Mixed, improving
Chemical Contaminants in Edible Fish Tissue	4083	Human Health	Mixed, improving
Preyfish Populations	17	Nearshore & Open Waters	Mixed
Spawning-Phase Sea Lamprey Abundance	18	Nearshore & Open Waters	Mixed
Lake Trout	93	Nearshore & Open Waters	Mixed
Phosphorus Concentrations & Loadings	111	Nearshore & Open Waters	Mixed
Toxic Chemical Concentrations in Offshore Waters	118	Nearshore & Open Waters	Mixed
Contaminants in Snapping Turtle Eggs	4506	Coastal Wetlands	Mixed
Area, Quality & Protection of Alvar Communities	8129 (in part)	Nearshore Terrestrial	Mixed
Sustainable Agricultural Practices	7028	Land Use	Mixed
E. coli and Fecal Coliform in Recreational Waters	4081	Human Health	Mixed
Air Quality	4176	Human Health	Mixed
Economic Prosperity	7043	Societal	Mixed
Acid Rain	9000	Unbounded	Mixed
Native Unionid Mussels	68	Nearshore & Open Waters	Mixed, deteriorating
Scud (*Diporeia hoyi*)	93	Nearshore & Open Waters	Mixed, deteriorating
Amphibian Diversity & Abundance	4504	Coastal Wetlands	Mixed, deteriorating
Wetland-dependent Bird Diversity & Abundance	4507	Coastal Wetlands	Mixed, deteriorating
Coastal Wetland Area by Type	4510	Coastal Wetlands	Mixed, deteriorating
Effect of Water Level Fluctuations `	4861	Coastal Wetlands	Mixed, deteriorating
Extent of Hardened Shoreline	8131	Nearshore Terrestrial	Mixed, deteriorating
DELT in Nearshore Fish	101	Nearshore & Open Waters	Poor (Lake Erie)
Exotic Species Introduced into the Great Lakes (aquatic only)	9002	Unbounded	Poor
Population Monitoring & Contaminants Affecting the American Otter	8147	Nearshore Terrestrial	Insufficient data to assess indicator
Phytoplankton Populations	109	Nearshore & Open Waters	Unable to assess status until targets are determined
Zooplankton Populations	116	Nearshore & Open Waters	Unable to assess status until targets are determined
Urban Density	7000	Land Use	Unable to assess status until targets are determined
Mass Transportation	7012	Land Use	Unable to assess status until targets are determined
Water Use	7056	Societal	Unable to assess status until targets are determined

*See page 25 for definitions